

CLAIMS:

1. An active matrix display comprising
a matrix of display pixels being associated with intersections of crossing select
electrodes and control electrodes,
a select driver for supplying select signals (SE) to the select electrodes,
5 a control driver for supplying control signals (DA) to the control electrodes,
a voltage level generator for generating a plurality of different voltage levels
(VBi), and

select circuits, each being coupled between an associated one of the display
pixels and the voltage level generator for supplying a selected one of said plurality of
10 different voltage levels (VBi) via at least one voltage level electrode to the associated one of
the display pixels in dependence on both the select signals (SE) indicating whether the
associated one of the pixels is selected and the control signals (DA) indicating which one of
said plurality of different voltage levels (VBi) has to be supplied to the associated one of the
pixels.

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2. An active matrix display as claimed in claim 1, characterized in that said
voltage level generator is adapted for supplying the plurality of different voltage levels (VBi)
as a single voltage signal (VB) having different levels occurring successively in time during
select periods (TS), and in that the select driver is adapted for selecting the associated one of
20 the pixels during each of the select periods (TS), the control signal (DA) determining whether
a particular one of the plurality of different voltage levels (VBi) is supplied to the associated
one of the pixels.

3. An active matrix display as claimed in claim 2, characterized in that the select
25 circuits each comprise

a single drive switch having a main current path coupled between the
associated one of the pixels and a single voltage level electrode carrying the single voltage
signal (VB), and

a single select switch having a main current path being arranged between one of the control electrodes and a control input of said single drive switch, and having a control input coupled to one of the select electrodes.

5 4. An active matrix display as claimed in claim 1, characterized in that said voltage level generator is adapted for supplying at least two voltage signals (VBA, VBB) each comprising at least one of the plurality of different voltage levels (VB_i), and in that the select driver is adapted for selecting the associated one of the pixels during each select period (TS), the control signal (DA) determining whether one of the at least two voltage
10 signals (VB₁, VB₂) is supplied to the associated one of the pixels.

5. An active matrix display as claimed in claim 4, characterized in that said matrix display comprises at least two voltage level electrodes, each for carrying one of the at least two voltage signals (VB₁, VB₂),
15 the select driver comprises
a plurality of drive switches, each having a main current path coupled between the associated one of the pixels and one of the at least two voltage level electrodes, and
a plurality of select switches, each being coupled between a same one of the select electrodes and an associated control input of one of the at least two drive switches, and
20 in that the control driver is adapted for supplying the control signals (DA) via at least two of the control electrodes to associated control inputs of the plurality of select switches.

6. An active matrix display as claimed in any one of the claims 1 to 5,
25 characterized in that the pixels comprise electrophoretic material.

7. A method of driving an active matrix display comprising a matrix of display pixels being associated with intersections of crossing select electrodes and control electrodes, the method comprising
30 supplying a select signal (SE) to the select electrodes,
supplying a control signal (DA) to the control electrodes,
generating a plurality of different voltage levels (VB_i), and
supplying a selected one of said plurality of different voltage levels (VB_i) via
at least one voltage level electrode to an associated one of the display pixels in dependence

on both the select signal (SE) indicating whether the associated one of the pixels is selected and the control signal (DA) indicating which one of said plurality of different voltage levels (VBi) has to be supplied to the associated one of the pixels.

- 5 8. A display apparatus with an active matrix display comprising
a matrix of display pixels being associated with intersections of crossing select
electrodes and control electrodes,
a signal processing circuit for receiving an input display signal (VI) and for
supplying a first control signal (CC), a second control signal (CS), and a third control signal
10 (CG),
a select driver for supplying select signals (SE) to the select electrodes under
control of the first control signal (CS),
a control driver for supplying control signals (DA) to the control electrodes
under control of the second control signal (CC),
15 a voltage level generator for generating a plurality of different voltage levels
(VBi) under control of the third control signal (CG),
select circuits, each being coupled between an associated one of the display
pixels and the voltage level generator, for supplying a selected one of said plurality of
different voltage levels (VBi) to the associated one of the display pixels in dependence on
20 both the select signals (SE) indicating whether the associated one of the pixels is selected and
the control signals (DA) indicating which one of said plurality of different voltage levels
(VBi) has to be supplied to the associated one of the pixels.